Amendments to the Claims:

1. (Currently Amended) An atomic layer deposition method, comprising:

positioning a semiconductor substrate within ~~an atomic layer~~ a deposition chamber;

feeding a first deposition precursor to the chamber under first vacuum conditions effective to form a first monolayer on the substrate, the first vacuum conditions being maintained at least in part by a first non-roughing vacuum pump connected to the chamber and through which at least some of the first deposition precursor flows; and

after forming the first monolayer, feeding a purge gas to the chamber under second vacuum conditions maintained at least in part by a second non-roughing vacuum pump connected to the chamber which is different from the first non-roughing vacuum pump and through which at least some of the purge gas flows.

2. (Original) The method of claim 1 comprising using a roughing vacuum pump to lower chamber pressure prior to the first deposition precursor feeding.

3. (Original) The method of claim 1 comprising after feeding the purge gas, feeding a second deposition precursor different from the first deposition precursor to the chamber effective to form a second monolayer on the first monolayer.

4. (Original) The method of claim 1 comprising after feeding the purge gas, feeding a second deposition precursor to the chamber different from the first deposition precursor under third vacuum conditions effective to form a second monolayer on the first monolayer and using the first non-roughing vacuum pump in fluid communication with the chamber during the second deposition precursor feeding.

5. (Original) The method of claim 1 comprising after feeding the purge gas, feeding a second deposition precursor to the chamber different from the first deposition precursor under third vacuum conditions effective to form a second monolayer on the first monolayer, the third vacuum conditions being maintained at least in part by a third non-roughing vacuum pump connected to the chamber which is different from the first and second non-roughing vacuum pumps.

6. (Original) The method of claim 1 wherein the first vacuum conditions include a substantially constant vacuum pressure within the chamber.

7. (Original) The method of claim 1 wherein the first vacuum conditions include varied vacuum pressure within the chamber.

8. (Original) The method of claim 1 wherein vacuum pressure within the chamber is substantially the same under the first and second vacuum conditions.

9. (Original) The method of claim 1 wherein vacuum pressure within the chamber is substantially constant and the same under the first and second vacuum conditions.

10. (Original) The method of claim 1 wherein vacuum pressure within the chamber is different under the first and second vacuum conditions.

11. (Original) The method of claim 1 wherein vacuum pressure within the chamber is substantially constant and different under the first and second vacuum conditions.

12. (Original) The method of claim 1 comprising isolating the first non-roughing vacuum pump from the chamber during at least some of the purge gas feeding.

13. (Original) The method of claim 1 comprising isolating the second non-roughing vacuum pump from the chamber during at least some of the first deposition precursor feeding.

14. (Original) The method of claim 1 comprising isolating the second non-roughing vacuum pump from the chamber during all of the first deposition precursor feeding.

15. (Original) The method of claim 1 comprising operating the second non-roughing vacuum pump at a higher pumping speed during the purge gas feeding than the first non-roughing vacuum pump is operated at during the first deposition precursor feeding.

16. (Original) The method of claim 1 wherein the chamber is provided with multiple outlets at the chamber, one of said outlets being in fluid communication with the first non-roughing vacuum pump, another of said outlets being in fluid communication with the second non-roughing vacuum pump.

17. (Currently Amended) The method of claim 1 wherein the chamber is provided with one outlet at the chamber which is in <u>downstream</u> fluid communication with both the first and second non-roughing vacuum pumps.

18. (Currently Amended) An atomic layer deposition method, comprising:

positioning a semiconductor substrate within ~~an atomic layer~~ a deposition chamber;

feeding a first deposition precursor to the chamber under first vacuum conditions effective to form a first monolayer on the substrate, the first vacuum conditions being maintained at least in part by a first non-roughing vacuum pump connected to the chamber and through which at least some of the first deposition precursor flows, the first non-roughing vacuum pump being operated at a first substantially constant pumping speed while forming the first monolayer; and

after forming the first monolayer, isolating the first non-roughing vacuum pump from the chamber and feeding a purge gas to the chamber under second vacuum conditions maintained at least in part by a second non-roughing vacuum pump connected to the chamber which is different from the first non-roughing vacuum pump and through which at least some of the purge gas flows, the second non-roughing vacuum pump being operated at a second pumping speed which is greater than the first pumping speed.

19. (Original) The method of claim 18 wherein the isolating occurs during the purge gas feeding.

20. (Original) The method of claim 18 wherein the isolating occurs before the purge gas feeding.

21. (Original) The method of claim 18 comprising isolating the second non-roughing vacuum pump from the chamber during at least some of the first deposition precursor feeding.

22. (Original) The method of claim 18 comprising isolating the second non-roughing vacuum pump from the chamber during all of the first deposition precursor feeding.

23. (Original) The method of claim 18 comprising after feeding the purge gas, feeding a second deposition precursor different from the first deposition precursor to the chamber effective to form a second monolayer on the first monolayer.

24. (Original) The method of claim 18 comprising after feeding the purge gas, feeding a second deposition precursor to the chamber different from the first deposition precursor under third vacuum conditions effective to form a second monolayer on the first monolayer and using the first non-roughing vacuum pump in fluid communication with the chamber during the second deposition precursor feeding.

25. (Original) The method of claim 18 comprising after feeding the purge gas, feeding a second deposition precursor to the chamber different from the first deposition precursor under third vacuum conditions effective to form a second monolayer on the first monolayer, the third vacuum conditions being maintained at least in part by a third non-roughing vacuum pump connected to the chamber which is different from the first and second non-roughing vacuum pumps.

26. (Original) The method of claim 18 wherein vacuum pressure within the chamber is different under the first and second vacuum conditions.

Claims 27-53 (Canceled).

54. (New) The method of claim 1 wherein the chamber is sized to retain no more than a single wafer at a time for atomic layer depositing upon, the positioning being of only a single wafer with the chamber.

55. (New) The method of claim 18 wherein the chamber is sized to retain no more than a single wafer at a time for atomic layer depositing upon, the positioning being of only a single wafer with the chamber.